

Applicant : Vedat Eryuboglu et al.
Serial No. : 09/891,103
Filed : June 25, 2001
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Attorney's Docket No.: 12144-007001

Amendments to the Drawings:

The attached replacement sheets of drawings include changes to Figs. 1 and 2 and replace the original sheets including Figs. 1 and 2, respectively.

In Figure 1, the reference numeral 30 has been added twice to show the R-P interfaces.

In Figure 2, In Figure 2, the lines from the PDSN to the RNCs have been redrawn to extend from the PCF 50 to the RNCs, as shown in the originally filed version of Figure 2.

Attachments following last page of this Amendment:

Replacement Sheets (2 pages)

REMARKS

Applicant submits this Supplemental Reply in response to the Office Action dated January 31, 2008. Applicant submits herewith a new set of claims to replace the claims list in the previously filed, reply to action of January 31, 2008 filed on June 30, 2008. Applicant inadvertently listed claim 112 as "Previously Presented". Applicant has correctly amended the claim identifier of claim 112 to read "Currently Amended". In view of the foregoing amendments and remarks respectively provided in the previous reply and this supplemental reply, Applicants respectfully submit that the application is in condition for allowance, and such action is respectfully requested at the Examiner's earliest convenience.

Claims 8, 10-27, 35-48, 50-52, 54-81, 83-93, and 95-132 are presented for examination, of which claims 36, 67, 79, 80, 92, 93, 97, 100, 129, and 130 are independent. New claims 131 and 132 have been added. Favorable reconsideration and further examination are respectfully requested.

Applicants note that the Examiner has not returned an initialed PTO-1449 Form for the Information Disclosure Statement filed by Applicant on June 6, 2007. Applicants respectfully request that the Examiner please confirm that the references listed on the PTO-1449 Form have been considered and that the Examiner please return an initialed copy of the Form in the Examiner's next communication.

The Examiner objected to the replacement drawings provided on November 2, 2007. Applicants have provided new replacement drawings for Figures 1 and 2. In Figure 1, the reference numeral 30 has been added twice to show the R-P interfaces.¹ In Figure 2, the lines from the PDSN to the RNCs have been redrawn to extend from the PCF 50 to the RNCs, as shown in the originally filed version of Figure 2. In view of these corrections, Applicants submit that the Examiner's objections have been overcome and Applicants request that the Examiner approve the replacement drawings for Figures 1 and 2.

¹ Specification at p. 2 ("The RNC communicates with the PDSN over a standard interface termed the R-P (Radio-Packet) interface 30.").

The Examiner rejected claims 96-98, 113-120 and 129 under 35 U.S.C. § 112, first paragraph, as failing to comply with the written description requirement.

Independent claim 97 (and claims 96 and 98, which ultimately depend from claim 97), is directed to “[a] computer-readable medium that stores executable instructions for use at radio network controller...”, while independent claim 129 (and claims 113-120, which ultimately depend from claim 129), is directed to “[a] computer-readable medium that stores executable instructions for use at a radio node...”.

As described in Applicants' specification, a radio network controller (RNC) is a server. A radio node (RN) is another network device. The following example passages from the specification make this clear.²

IMPROVED CLIENT/SERVER ARCHITECTURE

...

Each RN keeps a routing table for the mapping between the UATI and the serving RNC ...

...

Similarly, on the forward link, when a server module in the serving RNC has a MAC layer packet ready for transmission on the Control Channel of a particular sector, it first sends the packet to an I/O card in the serving RNC along with a Stream Identifier that includes the UATI of the receiving AT, the transmitting sector's SectorID (or a representation of it) and a MAC Index identifying the packet as a control channel packet. The I/O card in the serving RNC then uses the UATI value to determine the IP address of the RN to which to send the packet. It then encapsulates the MAC Layer packet together with its Stream Identifier in an IP packet whose destination address is set to the IP Address of the RN. The RN, upon receiving the packet, reads the SectorID value in the Stream Identifier to determine the sector that will transmit the packet. It then passes the MAC Layer packet along with the SectorID and MAC Index to the appropriate modem card. The modem card schedules the packet for transmission on the control channel.

FAILURE RECOVERY & LOAD BALANCING

² Specification at p. 16, line 12; p. 18, lines 20-21; p. 23, line 15, to p. 24, line 9.

The client/server architecture described earlier can be further extended to increase the overall reliability of the wireless network. (Note, the RNC may be a carrier-class equipment with internal redundancy to handle failure of its various cards/modules....

In these examples, the “serving” RNC is part of “client/server architecture” and may include a “serving module” and an “I/O card”. Similarly, the RN may include an “IP Address”, a “routing table,” and a “modem card.” A person having ordinary skill in the art would understand the RNC, for example, to be a server, and, further, that the RNC may be a computer or computing device capable of reading and executing executable instructions stored on a computer-readable medium, such as memory. A person having ordinary skill in the art would understand that the RN may be a computer or computing device capable of reading and executing executable instructions stored on a computer-readable medium, such as memory. As such, the computer-readable medium claims are supported by the specification and Applicants respectfully request that these rejections be withdrawn.

The Examiner rejected claims 17, 36, 53, 67-69, 74, 78-81, 87, 91-94, 100, 110, 111, and 130 under 35 U.S.C. § 102(b) as being anticipated by Ziv, International Publication Number WO 98/09460 (“Ziv”). The Examiner also rejected claims 96, 97, 113, and 129 under 35 U.S.C. § 103(a)³ as being unpatentable over Ziv in view of Langberg et al., U.S. Patent No. 5,852,630 (“Langberg”). Applicants do not concede that the previously pending versions of these claims were unpatentable over Ziv or Langberg, alone or in combination. Nonetheless, in order to advance prosecution and obtain early issuance, Applicants have amended independent claims 36, 67, 79, 80, 92, 93, 100, 129, and 130.

Claim 36 recites:

36. (Currently Amended) A method comprising,
enabling many-to-many communication among radio network
controllers and radio nodes through a packet network,
establishing a first session for a first ~~dormant~~ access terminal on a
first radio network controller through a first radio node, wherein the first
session is established when the first access terminal is dormant, and

³ The Office Action, dated January 31, 2008, listed this rejection as being under 35 U.S.C. § 102(b), but review of the Examiner’s rejection makes clear that the Examiner intended to reject these claims under 35 U.S.C. § 103(a). See Office Action dated January 31, 2008, at pp. 13-16.

maintaining the first session on the first radio network controller as the first access terminal moves from a coverage area of the first radio node to any portion of a coverage area of a second radio node through which a second dormant access terminal has a second session on a second radio network controller, wherein the first session is maintained when the first access terminal is dormant;

wherein when the first access terminal is dormant, the first access terminal has the first session established on the first radio network controller and does not have any traffic channel established with any radio network controller; and

wherein when the second access terminal is dormant, the second access terminal has the second session established on the second radio network controller and does not have any traffic channel established with any radio network controller.

The Examiner responded to remarks made by Applicants in a reply to the previous Office Action with the following comments (in small, bold type):

15. Applicant's arguments filed on November 02, 2007 have been fully considered but they are not persuasive.

Regarding claim 67, Applicant argues that the claimed subject matter "a session" is not an "initiated connection" as discussed in the Ziv reference, as the access terminals having the sessions are dormant. The Examiner respectfully disagrees. The claim merely recites a dormant access terminal having a session with a first radio network controller. According to The Merriam-Webster Dictionary, the word "dormant" has the meaning of inactive; not actively growing or functioning. However the "dormant access terminal" as claimed is an active access terminal and has some kind of communication, which can be considered as a session, link or connection etc., with the radio network controller that it associates with. The claim also does not define what a "session" is. Therefore, the Examiner believes that the cited reference can properly and reasonably read on the claim.

In amending the independent claims, such as claim 36, Applicants have attempted to provide further clarification as regards a "dormant access terminal", a "session", and a "traffic channel". For example, as amended, claim 36 recites, *inter alia*, that when a first access terminal is dormant, the first access terminal has a first session established on a first radio network controller and does not have any traffic channel established with any radio network controller. When a second access terminal is dormant, the second access terminal has the second session established on the second radio network controller and does not have any traffic channel established with any radio network controller.

The independent claims all recite features that involve dormant access terminal(s). For example, amended claim 36 in particular includes the above clarifying language and also recites, *inter alia*, “establishing a first session for a first access terminal on a first radio network controller through a first radio node, when the first access terminal is a dormant access terminal, on a first radio network controller through a first radio node, wherein the first session is established when the first access terminal is dormant”. Another independent claim, claim 67, for example, has been amended to recite similar clarifying language to that used in amended claim 36 and also recites, *inter alia*, “enabling a radio node to simultaneously serve both a first access terminal and a second access terminal, the first access terminal having a first session established on a first radio network controller and the second access terminal having a second session established on a second radio network controller, the radio node being interconnected with the radio network controllers using a packet network, wherein the radio node is enabled to simultaneously serve both the first access terminal and the second access terminal when the first and the second access terminals are dormant”. Yet another independent claim, claim 92, directed to a system, has been amended to recite similar clarifying language to that used in amended claims 36 and 67 and also recites, *inter alia*, the system “enabling the first access terminal to maintain a first session on the first radio network controller when the first access terminal moves from any portion of the coverage area of the radio node to any portion of a coverage area of another radio node through which a second access terminal of the at least two access terminals has a second session on a second radio network controller of the radio network controllers, wherein the first access terminal is enabled to maintain the first session on the first radio network controller when the first access terminal is dormant”.

Turning to the applied art, Ziv does not disclose or suggest any of the foregoing features of independent claims 36, 67, or 92. Ziv discloses using “a simple packet router” as an CDMA interconnect subsystem 26 to support connections between base station controllers and base stations transceiver subsystems.⁴ The entire focus of Ziv, however, is on, e.g., call connections

⁴ Ziv, pg. 6, lines 5-13 (“Because it is a simple packet router, CDMA interconnect subsystem 26 does not add great expense or complexity to the system.”); Fig. 2.

made between a remote unit, a base station, a base station controller, a mobile switching center (MSC), and a public switched telephone network (PSTN).⁵

... Telephone calls are routed by base station transceiver subsystems 14A - 14I between remote unit 34 and base station controllers (BSC) 12A - 12C of systems 30. Telephone calls may also be routed by base station transceiver subsystems 24A - 24I between remote unit 34 and base station controllers 22A - 22C of system 32. ...

... Once a call has been established, it occupies a signal path from the PSTN through a mobile switching center and base station controller to at least one base station transceiver subsystem. The signal path may change during the call if the call is handed off between base station transceiver subsystems due to the movement of the remote unit within the system. ...

... Assume a call is established between unit remote unit 34 and a landline connected to the PSTN. ...

... Mobile switching center 10 also provides a connection from the PSTN to base station controller 12A. Base station controller 12A receives the PSTN format signaling from mobile switching center 10 and encodes it into packets for transmission over the wireless link. ...

... Note that the number of calls that can be handled by base station transceiver subsystems 14A - 14C is limited to the number of calls that can be handled by base station controller 12A. ...

... Note what happens in the configuration of FIG. 2 if connection 16 fails. A call connection can be established, using IS-634 protocol, from the PSTN to MSC 10 to base station controller 12B through CDMA interconnect subsystem 26 and to BTS 14B. ...

As pointed out in Applicants' remarks on November 2, 2007, Ziv discloses what happens when a radio network controller [the base station controller of Ziv]⁶ fails⁷ and when a radio network controller is over capacity.⁸ As explained above, Ziv is concerned with routing *connected calls*, and does not disclose or suggest *dormant access terminals*.

⁵ *Id.*, p. 3, lines 18-22, 26-30; p. 4, lines 12-15, 30-33; p. 5, lines 13-15; p. 6, lines 20-24.

⁶ Applicants remarks dated November 2, 2007, at pg. 26, indicated "agreement with the examiner as to the correspondence between terms in the claims and terms in Ziv, that is, 'BTS' corresponds to a 'radio node,' 'BSC' corresponds to a 'radio network controller,' and 'CIS' is a 'packet network.'"

⁷ Ziv, pg. 6, lines 20-30.

⁸ *Id.*, pg. 6, line 31 to p. 7, line 2.

Nowhere does Ziv disclose or suggest any of the features of claims 36, 67, or 92, regarding, e.g., dormant access terminal(s). The CDMA interconnect subsystem 26 disclosed by Ziv is “a simple packet router” and “does not add great expense or complexity to the system.”⁹ It is therefore not surprising that Ziv does not disclose or suggest the complexities involved with dormant access terminals in a wireless network. Ziv also discusses “soft” and “hard” handoffs, which occur during calls,¹⁰ but does not discuss, for example, “dormant” handoffs that occur when an access terminal is dormant.

The Examiner used Langberg for the claims directed to a computer-readable medium, stating that “Langberg et al. teaches a method for a transceiver warm start activation procedure can be implemented in software stored in a computer-readable medium.” Applicants, while not conceding the comments of the Examiner, note that Langberg does not cure the deficiencies of Ziv as regards, e.g., dormant access terminal(s).

Thus, for at least the foregoing reasons, Ziv and Langberg, alone or in combination, do not disclose or render obvious the subject matter of independent claims 36, 67, or 92, and there is no reason to combine these references to provide such subject matter. Applicants therefore respectfully request reconsideration and withdrawal of these rejections.

The other independent claims 79, 80, 93, 97, 100, 129, and 130 are patentable for at least similar reasons as at least one of claims 36, 67, or 92. Applicants therefore respectfully request reconsideration and withdrawal of these rejections.

Each of the dependent claims 17, 53, 68-69, 74, 78, 80, 81, 87, 91, 93, 94, 96, 110, 111, and 113 is patentable for at least the same reasons as its corresponding independent claim. Applicants therefore respectfully request reconsideration and withdrawal of these rejections.

The Examiner made numerous other rejections of dependent claims, i.e., claims 8, 10-27, 35, 37-48, 50-52, 54-66, 70-73, 75-77, 83-86, 88-90, 92, 93, 95, 98, 99, 101-109, 112, 113, and 121-128, all of which ultimately depend from one of the independent claims identified above, and all of which are patentable for at least the same reasons as their corresponding independent claim. Applicants therefore respectfully request reconsideration and withdrawal of these rejections.

⁹ *Id.*, pg. 6, lines 12-13.

¹⁰ *Id.*, pg. 3, lines 26-37.

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New claims 131 and 132 have been added and are believed to allowable and such action is respectfully requested.

Cancelled claims, if any, have been cancelled without prejudice or disclaimer.

It is believed that all of the pending claims have been addressed. However, the absence of a reply to a specific rejection, issue or comment does not signify agreement with or concession of that rejection, issue or comment. In addition, because the arguments made above may not be exhaustive, there may be reasons for patentability of any or all pending claims (or other claims) that have not been expressed. Finally, nothing in this paper should be construed as an intent to concede any issue with regard to any claim, except as specifically stated in this paper, and the amendment of any claim does not necessarily signify concession of unpatentability of the claim prior to its amendment.

Applicants believe the application is in condition for allowance, which action is respectfully requested.

Please apply any charges or credits to Deposit Account No. 06-1050, referencing attorney docket no. 12144-007001.

Respectfully submitted,

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